

[0051] FIG. 1 is a block diagram of a communication terminal according to one embodiment of the present invention.

[0052] Referring to FIG. 1, a communication terminal 100 includes a wireless communication unit 110, an A/V (audio/video) input unit 120, a manipulating unit 130, a sensing unit 140, an output unit 150, a storage unit 160, an interface unit 170, a control unit 180, a power supply unit 190, and the like. In implementing the respective elements for real application, it is understood that at least two of the elements can be combined into one or one element can be subdivided into at least two elements. The communication terminal 100 can include other components. All components of the communication terminal 100 are operatively coupled and configured.

[0053] The above elements are explained one by one as follows.

[0054] First of all, the wireless communication unit 110 includes a broadcast receiving module 111, a mobile communication module 112, a wireless Internet module 113, a short-range communication module 114, and a GPS module 115.

[0055] The broadcast receiving module 111 receives a broadcast signal and/or broadcast associated information from an external broadcast managing server via a broadcast channel. The broadcast channel can include one of a satellite channel and a terrestrial channel. The broadcast managing server preferably means a server that generates and/or transmits a broadcast signal and/or broadcast associated information or a server that receives and/or transmits a previously generated broadcast signal and/or broadcast associated information to a terminal.

[0056] The broadcast associated information may mean information associated with a broadcast channel, a broadcast program or a broadcast service provider. The broadcast signal can include at least one of a TV broadcast signal, a radio broadcast signal, and a data broadcast signal. And, the broadcast signal can further include a broadcast signal having a data broadcast signal combined with a TV or radio broadcast signal.

[0057] Meanwhile, the broadcast associated information can be provided via a mobile communication network or other network. If so, the broadcast associated information can be received by the mobile communication module 112.

[0058] The broadcast associated information can exist in various forms. For instance, the broadcast associated information can exist in such a format as EPG (electronic program guide) of DMB (digital multimedia broadcasting), ESG (electronic service guide) of DVB-H (digital video broadcast-handheld), etc.

[0059] The broadcast receiving module 111 receives broadcast signals using various broadcasting systems. In particular, the broadcast receiving module 111 can receive a digital broadcast signal using such a digital broadcasting system as DMB-T (digital multimedia broadcasting-terrestrial), DMB-S (digital multimedia broadcasting-satellite), Media-FLO (media forward link only), DVB-H (digital video broadcast-handheld), ISDB-T (integrated services digital broadcast-terrestrial), and the like.

[0060] Of course, the broadcast receiving module 111 is configured suitable for all kinds of broadcasting systems for providing broadcast signals as well as the above-explained digital broadcasting systems.

[0061] The broadcast signal and/or broadcast associated information, received via the broadcast receiving module 111, can be stored in the storage unit 160.

[0062] The mobile communication module 112 transmits/receives wireless signals to/from at least one of a base station, an external terminal, and a server on a mobile communication network or other network. In this case, the wireless signals can include at least one of an audio signal, a video communication call signal, and data variously formatted according to character/multimedia message transmission and reception.

[0063] The wireless Internet module 113 preferably can be a module for providing wireless Internet access. And, the wireless Internet module 113 can be provided within or outside the communication terminal 100.

[0064] The short-range communication module 114 preferably is a module for providing short-range communication. As the short-range communication technology, Bluetooth, RFID (radio frequency identification), IrDA (infrared data association), UWB (ultra-wideband), ZigBee or the like can be used.

[0065] And, the GPS (global positioning system) module 115 receives position information and other data from a plurality of satellites.

[0066] Meanwhile, the A/V (audio/video) input unit 120 is provided for audio and/or video signal input and can include a camera module 121, a microphone module 122, and the like. The camera module 121 processes an image frame of a still picture or moving picture obtained in a video communication mode or a photographing mode by an image sensor. And, the processed image frame can be displayed by a display module 151 of the output unit 150.

[0067] The image frame processed by the camera module 121 is stored in the storage unit 160 or can be externally transmitted via the wireless communication unit 110. Optionally, at least two camera modules 121 can be provided according to a configuration of the terminal.

[0068] The microphone module 122 receives an external audio signal via a microphone in a phone call mode, a recording mode, a voice recognition mode or the like, and then processes the received signal into electrical audio data. In case of the phone call mode, the processed audio data is converted into a transmittable format via the mobile communication module 112 and then outputted to a mobile communication base station. The microphone module 122 can implement various kinds of noise removing algorithms to remove noise generated in the course of receiving the external audio signal. In addition to or in lieu of the microphone module 122, other types of audio input unit may be used.

[0069] The manipulating unit (e.g., user input unit) 130 generates key input data inputted for an operational control of the terminal by a user. The manipulating unit 130 can include at least one of a keypad, a dome switch, a touchpad (static pressure/capacitance), a jog wheel, a jog switch, and the like. In particular, the touchpad configures a mutual layer structure in cooperation with the display module 151, which will be explained later, to be implemented into a touchscreen.

[0070] The sensing unit 140 senses a current status of the communication terminal 100 such as an open/close status of the communication terminal 100, a position of the communication terminal 100, a presence or non-presence of a user's touch and the like, and then accordingly generates a sensing signal for controlling an operation of the communication terminal 100.

[0071] For instance, if the communication terminal 100 is a slide type phone, the sensing unit 140 is capable of sensing whether the slide phone is open or closed. And, the sensing unit 140 is responsible for sensing the functions associated